

REMARKS/ARGUMENTS

Favorable reconsideration of this application is requested in view of the above amendments and in light of the following remarks and discussion.

Claims 1-3, 5-7, 10, 12-13, 15-25 and 48-49 are pending. Claims 1, 2, 5, and 6 have been presently amended. Claims 48-49 have been presently added. No new matter was added.

In the outstanding Office Action, Claims 1-3 and 5-7 were rejected under 35 U.S.C. § 103(a) as obvious over Selwyn (U.S. Patent No. 5,716,486) in view of Koike (U.S. Patent No. 6,726,799). Claims 10, 13, 16-18, 21, and 23-25 were rejected under 35 U.S.C. § 103(a) as obvious over Selwyn in view of Koike, and further in view of O'Donnell et al. (U.S. Patent Pub. 2005/015,0866, herein "O'Donnell") and Fakuda et al. (U.S. Patent Pub. 2003/0113479, herein "Fukuda"). Claims 12, 19, and 20 were rejected under 35 U.S.C. § 103(a) as obvious over Selwyn in view of Koike, O'Donnell, Fakuda, and further in view of George et al. (U.S. Patent No. 4,357,387, herein "George"). Claims 15 and 22 were rejected under 35 U.S.C. § 103(a) as obvious over Selwyn in view of Koike, O'Donnell, Fakuda, and Panitz et al. (U.S. Patent No. 5,925,228, herein "Panitz").

Claim Summary: the claims have been amended as shown in the attached claim amendment section. The amendment of claim 1 is supported by line 20 of page 28 to line 1 of page 29 and Fig. 5. In a like manner, claim 5 has been amended. Further, claims 48 and 49 have been added. The features of newly added claims 48 and 49 have been recited in the originally filed claims 4 and 8 respectively. Therefore, no new matter is introduced by the amendments.

Accordingly, Claim 1 is directed to a plasma processing apparatus and a ring member employed in the plasma processing apparatus. The plasma processing apparatus defined in

Claim 1 includes an inner ring member formed of a conductive material, installed to surround the to-be-treated substrate on the mounting table and spaced apart from an outer periphery of the to-be-treated substrate; an outer ring member formed of an insulating material, installed to surround the inner ring member on the mounting table; an electrode embedded inside the outer ring member. Namely, the inner ring is disposed between the outer periphery of the to-be-treated substrate and the inner periphery of the outer ring.

Regarding the 35 U.S.C. §103(a) rejection: None of the applied references (Selywn, Koike, O'Donnell and Fakuda) describe an inner ring member being formed of a conductive material such that the inner ring being disposed between the outer periphery of the to-be-treated substrate and the inner periphery of the outer ring. Thus, a combination of the applied references would not produce an inner ring member being formed of a conductive material such that the inner ring being disposed between the outer periphery of the to-be-treated substrate and the inner periphery of the outer ring.

Generally, when a dielectric layer (e.g., SiO₂ layer) is etched, a ring formed of a conductive material is disposed around the to-be-treated substrate and when a conductive layer (e.g., poly silicon layer) is etched, a ring formed of an insulating material (e.g., quartz) is disposed around the to-be-treated substrate. Since in Claim 1 the inner ring formed of the conductive material is disposed around the to-be-treated substrate, it is possible to provide a plasma processing apparatus which is more suitable for etching a dielectric layer. In addition, when the dielectric layer is etched, the thickness of the sheath region above the ring member is finely adjusted by adjusting the voltage applied to the electrode. Therefore, Applicant's submit that in-surface uniformity of a plasma processing and controllability of the thickness of the sheath region are improved when the dielectric layer is etched.

Therefore, Claim 1 defines features (having associated advantages) that are not disclosed in the applied art. These features as described above have industrial applicability which is not achieved by the applied art references. Hence, a combination of the applied art references would not produce the elements of Claim 1.

Since M.P.E.P. § 2143 indicates in the “combining prior art elements” illustrative rationale for non-obviousness (which is the one rationale that seems the closest to that which the examiner is applying) that a finding that the prior art included each element claimed has to be made, Applicants submit that the rejection to Claim 1 and dependent claims thereof be withdrawn.

Independent Claim 5, which includes the features corresponding to those added to amended Claim 1, is also allowable for the same reason as discussed above with regard to Claim 1. Therefore, it is submitted that the rejection to Claim 5 and dependent claims thereof be withdrawn.

Conclusion: It is respectfully requested that the rejections to the claims of the present application be withdrawn and pending claims be allowed in their present form.


Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

Customer Number

22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/07)



Steven P. Weihrouch
Attorney of Record
Registration No. 32,829

Ronald A. Rudder, Ph.D.
Registration No. 45,618